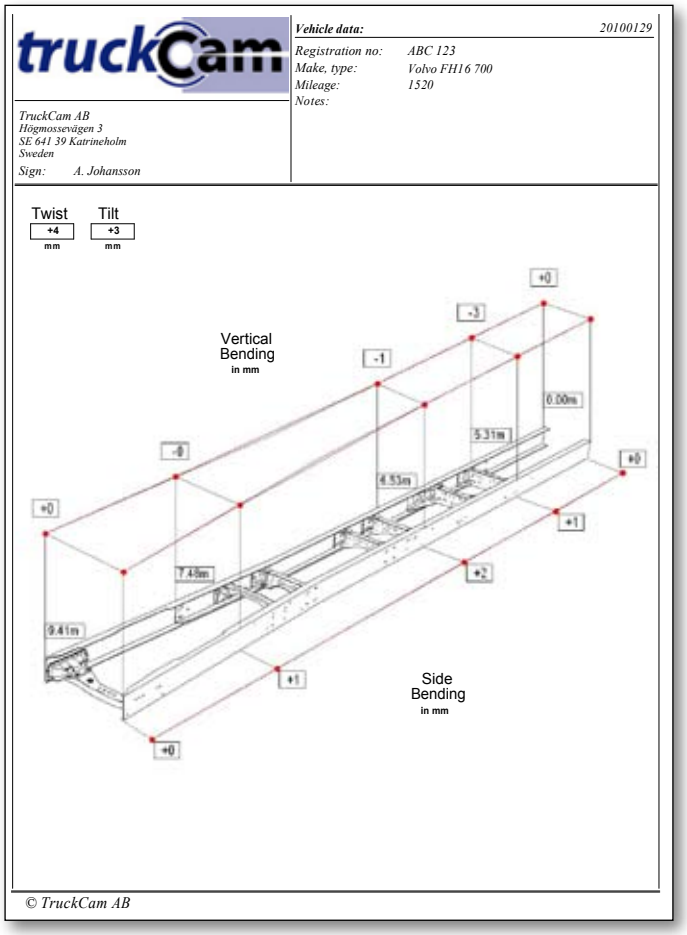
TruckCam
Frame Check System



User Manual

Software version 2.x.x

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1. PRODUCT DESCRIPTION

Agreed Functionality

- The TruckCam Frame Check System is designed for measuring of frames and chassis of commercial vehicles.
- The TruckCam Frame Check System provides measurement of side sway, vertical bend, tilt and twist.
- The TruckCam Frame Check System enables dynamic measurement while in driving position. No lifting of frame or chassis is required during the measurement.
- The TruckCam Frame Check System enables measurements to be performed fast and reliable on all types of commercial vehicles.
- The TruckCam Frame Check System uses wireless communication technology for transmission of information between camera sensors and computer.

Technical Data

Operating time with fully charged batteries	>16h
Charging unit operating voltage	100-240V, 50-60Hz
Operating temperature	-5° to +40° centigrade

System Requirements

Recommended

Central Processing Unit (CPU)	Intel Pentium IV 1,8GHz or equal
Memory (RAM)	2GB
Available hard disk space	1GB
Ports	1xUSB2.0

Minimum

Central Processing Unit (CPU)	Intel Pentium IV 1GHz or equal
Memory (RAM)	1GB
Available hard disk space	1GB
Ports	1xUSB2.0

Required operating system

Microsoft Windows 2000 SP3 / XP SP2 / Vista

Additional system requirements might apply to get the above mentioned operating systems fully functional, please check with your operating systems supplier.

Component Description

For component spare parts, see Appendix A – Spare Parts

Camera Sensor TC-256[2]

The TruckCam Camera Sensor is a rugged, high precision sensor specially designed to measure angles and distance relative to a reflective target. It has a strong housing with rubber protection at both ends. The camera lens and built-in flasher is protected by a hardened front glass.

The camera is equipped with an infra-red (IR) flasher, sending out short flashes of IR light a few times per second. When this light hits a reflective target, the light will reflect back to the camera lens. The lens is equipped with an IR-filter, only permitting IR light to pass through. The result is a picture having a reflective target depicted against a black background. Thus the camera can operate in complete darkness or in sunshine, since it only uses the light from the IR flasher.

The picture is analyzed by a microprocessor within the camera sensor itself, and information is sent to the computer by wireless communication. The computer finishes the calculations, giving the three angles α (alfa), β (beta) and *camber* as well as the distance to the target as a result. These parameters are then used by the computer software to calculate the wheel angles and frame deformations.

The camera is equipped with three electronic inclinometers as well as a gyroscope. The signals from these sensors are combined with the data from the camera to produce a very powerful tool to be used for wheel alignment. The gyroscope is used to extend the angle range to handle max turn angles for steerable axles. The electronic inclinometers are used to calculate camber, caster and KPI directly on the wheel itself.

The camera sensor is powered by a built-in battery pack, and the batteries are recharged every time the camera is placed in the charging cradle. The operating time of the batteries is >16 hours, depending on the way of use of the system. The camera has a standby mode where it consumes only 15% of the power. In standby mode the wireless connection is still active while the camera part itself is switched off. The software in the computer automatically switches the camera from standby mode to operation mode as needed.

[2] Needed for measurements, how ever not included in the TC-2007 TruckCam Upgrade System for Frame Measurement.

Frame Markers TC-207

The Frame Markers are markers that the camera sensor uses to determine angles and distances. These markers need to be kept clean, to maintain high measurement accuracy and long life time of the TruckCam system. For cleaning recommendations, please see Chapter 8 System Maintenance, page 30.

Wireless Server TC-305[3]

The Wireless Server is connected to a PC and powered via a USB cable. It permits the camera to communicate with the PC software.

Wheel Adapter TC-150[4]

The TruckCam Wheel Adapter is used to mount the cameras to the wheels of the vehicle. The wheel adapter is designed according to a tripod principle, to enable the best accuracy possible when measuring and fits aluminum as well as steel rims in sizes 12” – 24”.

Frame gauges TC-102[5]

The TruckCam Frame Gauges work according to a self-centering principle. When mounted to a vehicle they determine the vehicle center line, which is the basis for all TruckCam wheel angle calculations. The reflective targets are placed at the end of each frame gauge, to make up a square of known points for each measurement.

3 Needed for measurements, how ever not included in the TC-2007 TruckCam Upgrade System for Frame Measurement.

4 Needed for measurements, how ever not included in the TC-2007 TruckCam Upgrade System for Frame Measurement.

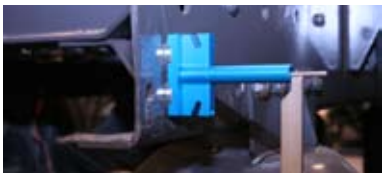
5 Needed for measurements, how ever not included in the TC-2007 TruckCam Upgrade System for Frame Measurement.

TruckCam Accessories

TruckCam offers a wide range of accessories to enhance and ease the frame measurement procedures even further:

Magnet Adapter TC-1029-2

This adapter can be used when ever needed to make the fitting of the frame gauges to the vehicle easier.



Chassis Extender TC-1026-2

This adapter is used when mounting the frame gauges to a vehicle with a very short overhang in the rear.

Frame Gauge Extender TC-102-30-2

The frame gauge extenders are used when mounting the frame gauge to vehicles with wide frames, where the maximum width of 130cm between frame gauge hangers is not enough. The total width between the hangers is with these units extended to 180cm.

2. SOFTWARE INSTALLATION AND SETUP

Installation

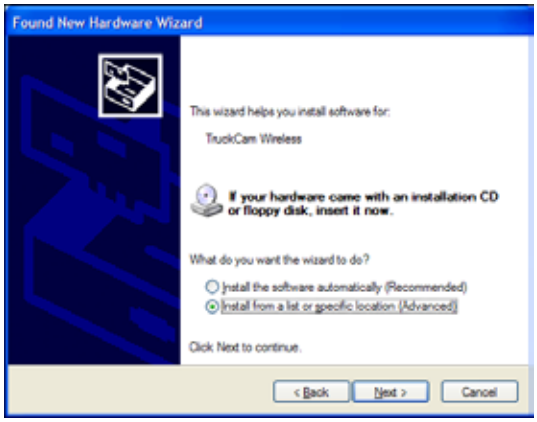
Start your computer and insert the TruckCam Software CD.

Plug the TruckCam Wireless Server into a USB port. Windows will find the server and ask you to install its device driver.

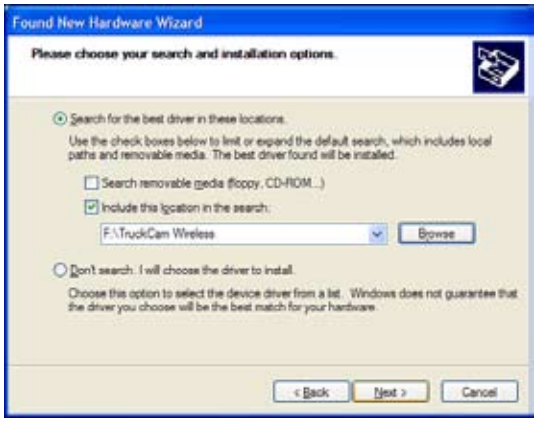
Wireless Server

Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
Windows will search for current and updated software by looking on your computer, on the hardware installation CD, or on the Windows Update Web site (with your permission).
Read our privacy policy
Can Windows connect to Windows Update to search for software?
Yes, this time only
Yes, now and every time I connect a device
No, not this time
Click Next to continue.
< Back
Next >
Cancel

Choose not to connect to Windows Update, since the Server device driver can be found on the TruckCam Software CD. Click **[Next]**.


Found New Hardware Wizard
This wizard helps you install software for:
TruckCam Wireless
If your hardware came with an installation CD or floppy disk, insert it now.
What do you want the wizard to do?
Install the software automatically (Recommended)
Install from a list or specific location (Advanced)
Click Next to continue.
< Back
Next >
Cancel

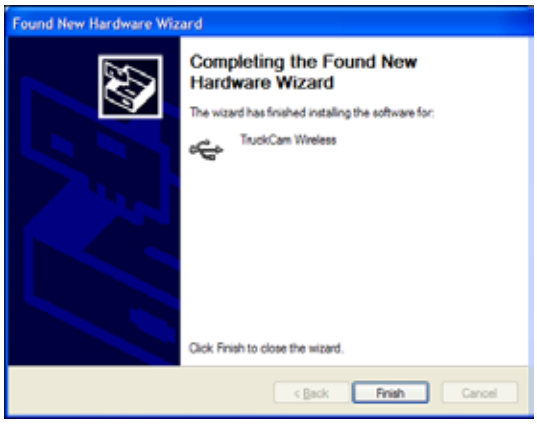
Choose to install the device driver from a specific location. Click **[Next]**.


Found New Hardware Wizard
Please choose your search and installation options.
Search for the best driver in these locations.
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.
Search removable media (floppy, CD-ROM...)
Include this location in the search:
F:\TruckCam Wireless
Browse
Don't search. I will choose the driver to install.
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.
< Back
Next >
Cancel

Choose to search removable media for the device driver or choose to specify a location and browse to the TruckCam Software CD. Click **[Next]**.

Hardware Installation
The software you are installing for this hardware:
TruckCam Wireless
has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation

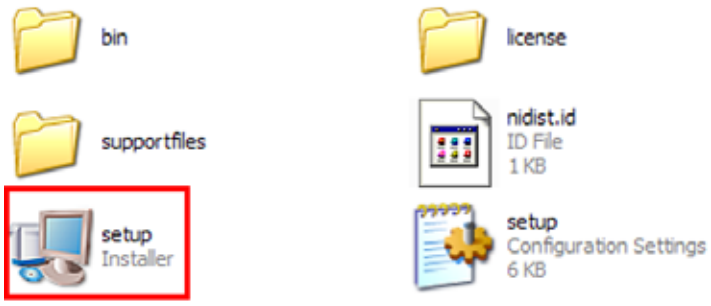
Click **[Continue Anyway]**. The device driver for the TruckCam Wireless Server is perfectly Windows 2000/XP/Vista compatible, although this warning might occur during installation.



Click **[Finish]** when the device driver has been completely installed.

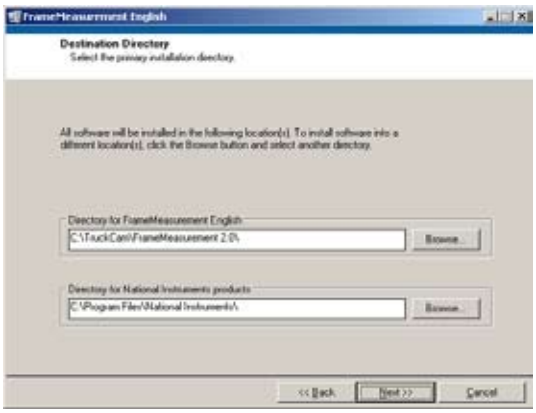
PC software

Load the TruckCam Software CD, and choose the folder for the applicable language.



Double click on the ‘Setup’ icon.

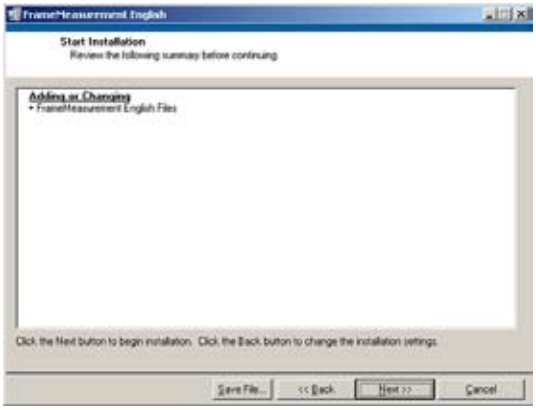
The software installation process will start up.



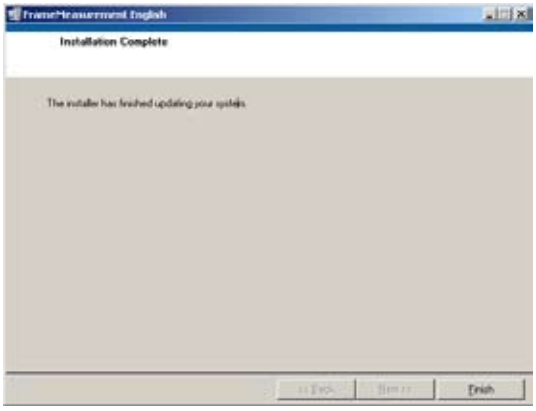
Choose to install the TruckCam program in a different folder by clicking **[Browse]** or continue the installation by clicking **[Next]**.

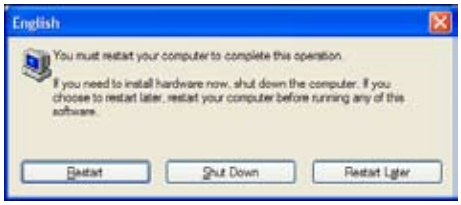
License Agreement
You must accept the license(s) displayed below to proceed.
NATIONAL INSTRUMENTS SOFTWARE LICENSE AGREEMENT
INSTALLATION NOTICE: THIS IS A CONTRACT. BEFORE YOU DOWNLOAD THE SOFTWARE AND/OR COMPLETE THE INSTALLATION PROCESS, CAREFULLY READ THIS AGREEMENT. BY DOWNLOADING THE SOFTWARE AND/OR CLICKING THE APPLICABLE BUTTON TO COMPLETE THE INSTALLATION PROCESS, YOU CONSENT TO THE TERMS OF THIS AGREEMENT AND YOU AGREE TO BE BOUND BY THIS AGREEMENT. IF YOU DO NOT WISH TO BECOME A PARTY TO THIS AGREEMENT AND BE BOUND BY ALL OF ITS TERMS AND CONDITIONS, CLICK THE APPROPRIATE BUTTON TO CANCEL THE INSTALLATION PROCESS. DO NOT INSTALL OR USE THE SOFTWARE, AND RETURN THE SOFTWARE WITHIN THIRTY (30) DAYS OF RECEIPT OF THE SOFTWARE (INCLUDING ALL ACCOMPANYING WRITTEN MATERIALS, ALONG WITH THEIR CONTAINERS) TO THE PLACE YOU OBTAINED THEM. ALL RETURNS SHALL BE SUBJECT TO NI'S THEN CURRENT RETURN POLICY.
1. Definitions. As used in this Agreement, the following terms have the following meanings:
I accept the License Agreement(s).
I do not accept the License Agreement(s).
<< Back
Next >>
Cancel

Click 'I accept the license agreement' and then click **[Next]**.


Start Installation
Review the following summary before continuing.
Adding or Changing
Click the Next button to begin installation. Click the Back button to change the installation settings.
Save File...
<< Back
Next >>
Cancel

Click **[Next]**.

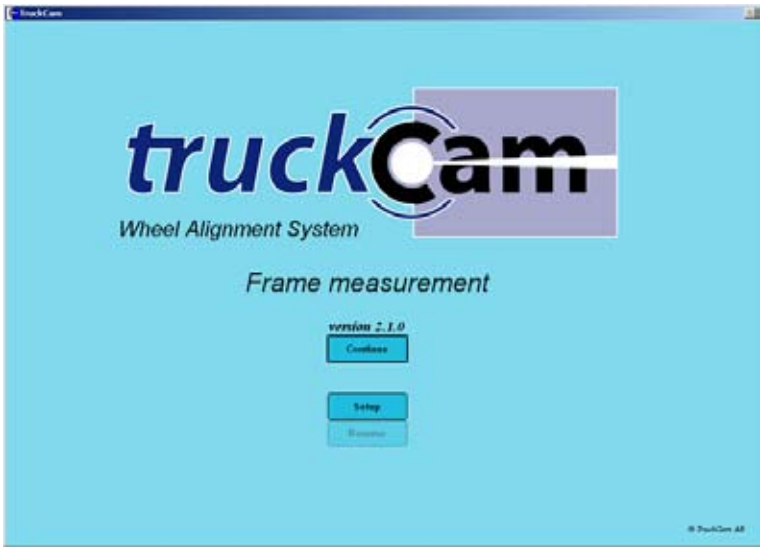



English
You must restart your computer to complete this operation.
If you need to install hardware now, shut down the computer. If you choose to restart later, restart your computer before running any of this software.
Restart
Shut Down
Restart Later

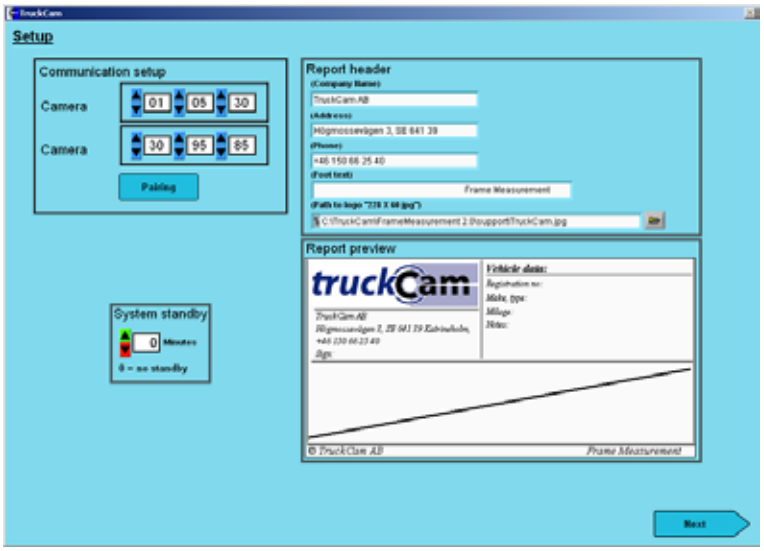
Click **[Finish]** when installation is complete. If the above 'Restart' dialog shows, please click **[Restart]** to restart the computer before starting to use your TruckCam system, in order for the software to work properly.

Setup

Double click on the TruckCam program icon to start the TruckCam program. Start up the cameras by pressing the **ON/OFF** button on the units respectively.



Click **[Setup]** to enter the program setup. Before using the system for the first time, it is required to enter the setup area to configure the program settings. These settings will then be stored in the program when you click **[Next]** in the setup window.



Communication setup

It is vital to the functionality of the system that you enter the correct radio numbers of the cameras here, in order for the wireless connections to work properly. The system is shipped with the entire wireless communication interface between the units fully set up and functional. However, when experiencing problems with wireless communication, you might need to 'Pair' the system units. Instructions on how to do this can be found in Section Pairing on page 16.

System standby

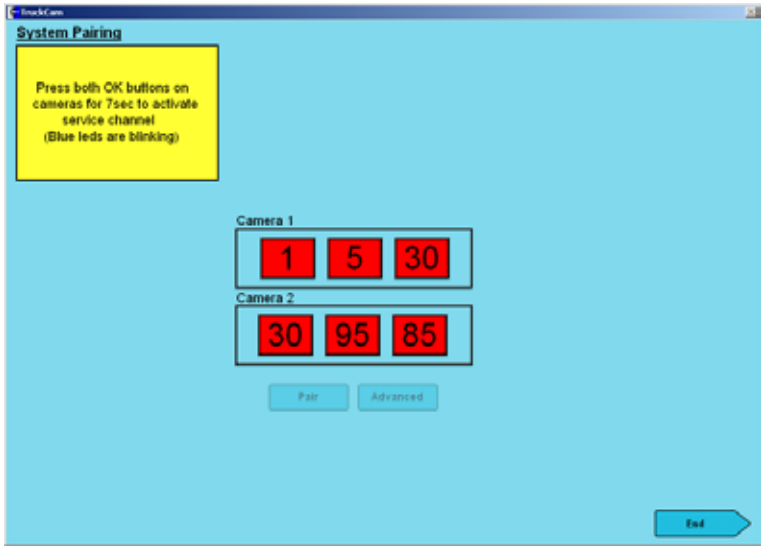
This is where you set the time of system inactivity before the system enters standby mode. A 0 value indicates that the standby mode is inactivated.

Report header and preview

Enter company details to be printed on each measurement report sheet. Also specify the path to the logo you want to use on each measuring report. In case you would prefer to use the TruckCam logo, this logo can be found in the Support subfolder of the TruckCam folder. Please note that a logo needs to be specified in order for the system to print a measurement report.

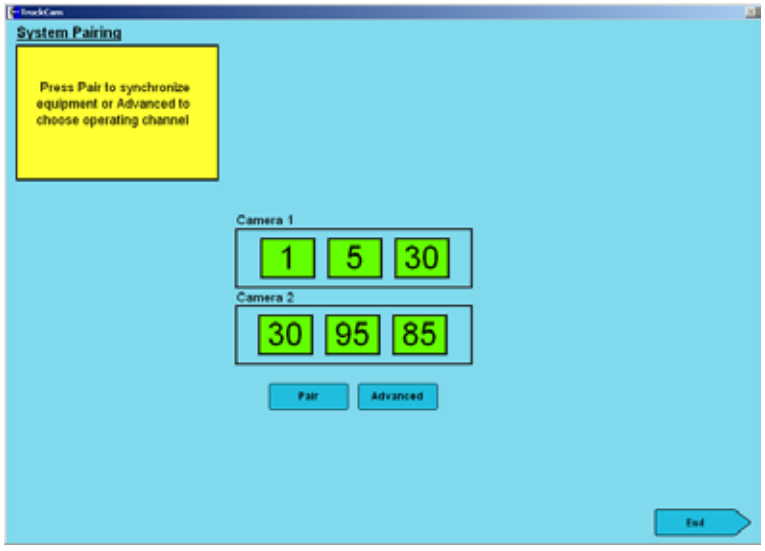
Pairing

Enter the Pairing function of the TruckCam system by clicking **[Pairing]** in the “Setup” window. Follow the steps presented by the help texts in the yellow square on the computer screen.



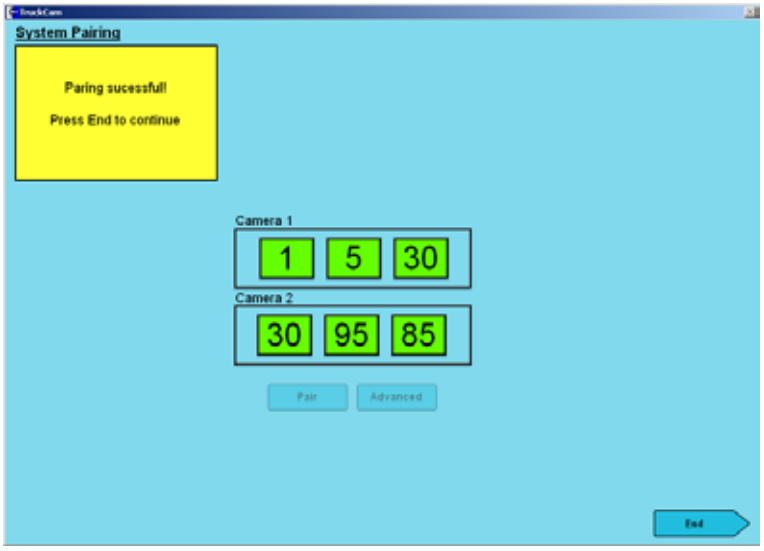
1. Press and hold both **OK** buttons on each camera for 7 seconds to activate the service channel. This is indicated by the blue LEDs on the cameras, which start to blink once the camera has entered service channel.

2. Wait until the red squares on the screen has turned green for both cameras.



3. Click **[Pair]** to automatically change the wireless channel to a randomly selected channel number, or click [Advanced] to set the wireless channel to a manually selected number between 1 and 60.

4. The squares on the screen will change from green to red and back to green again as the changing of communication channel is performed on all units. Please wait during this procedure.



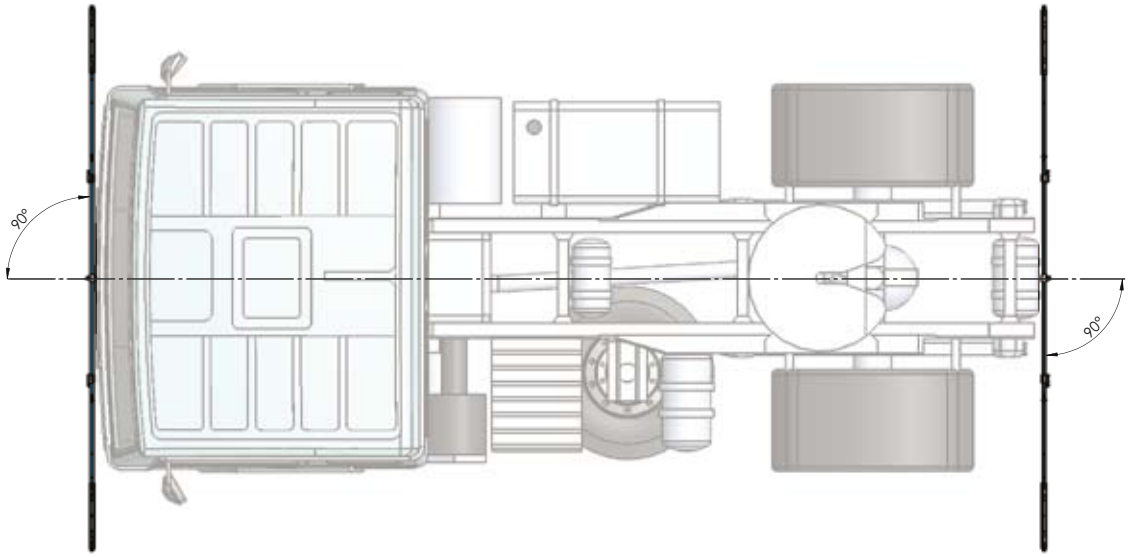
5. The system will tell you when the pairing of the units is done by a message in the yellow help text square. Now the units should communicate with each other.

3. MEASUREMENT PREPARATION

Before you start measuring the vehicle, please complete the below mentioned steps:

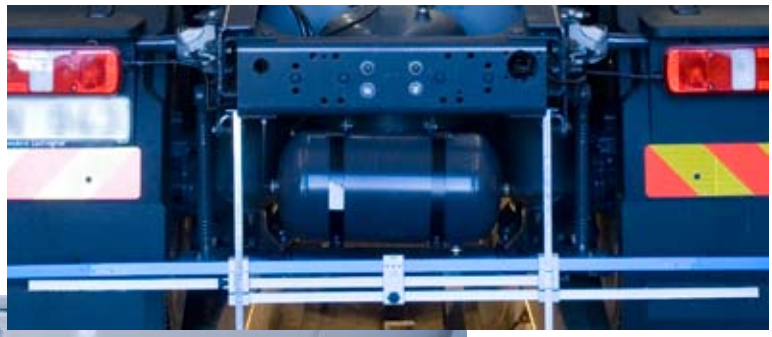
- Check tire pressure, tire size and inflate the tires to the specified pressure.
- Check if the floor or other surface that you're measuring on is reasonably flat.

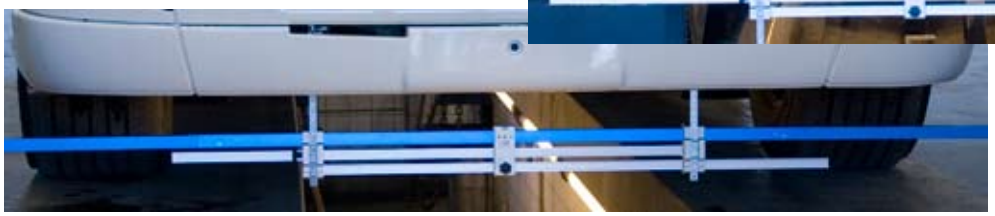
Mount Frame Gauges



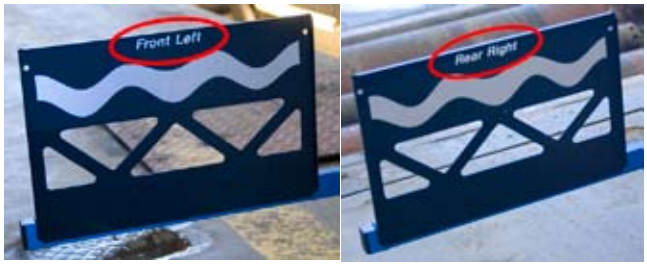
Mount the self centering frame gauges as square as possible to the frame of the vehicle, one in the front, the other in the rear. When using more than two frame gauges, please hang the extra frame gauges on the positions of the frame or chassis which you want to measure.

There are several different TruckCam adapter types available to make it easier to mount the frame gauges to the frame, please check out the accessories list[6] in this manual or contact your local TruckCam supplier for further information.





6 Section Product Description, cnapter Accessories, page 9



Place the reflective targets on the frame gauges. Make sure the targets are positioned correctly.

Mount Wheel Adapters

The TruckCam Wheel Adapters are made to fit both aluminum and steel rims in sizes 12” to 24”.

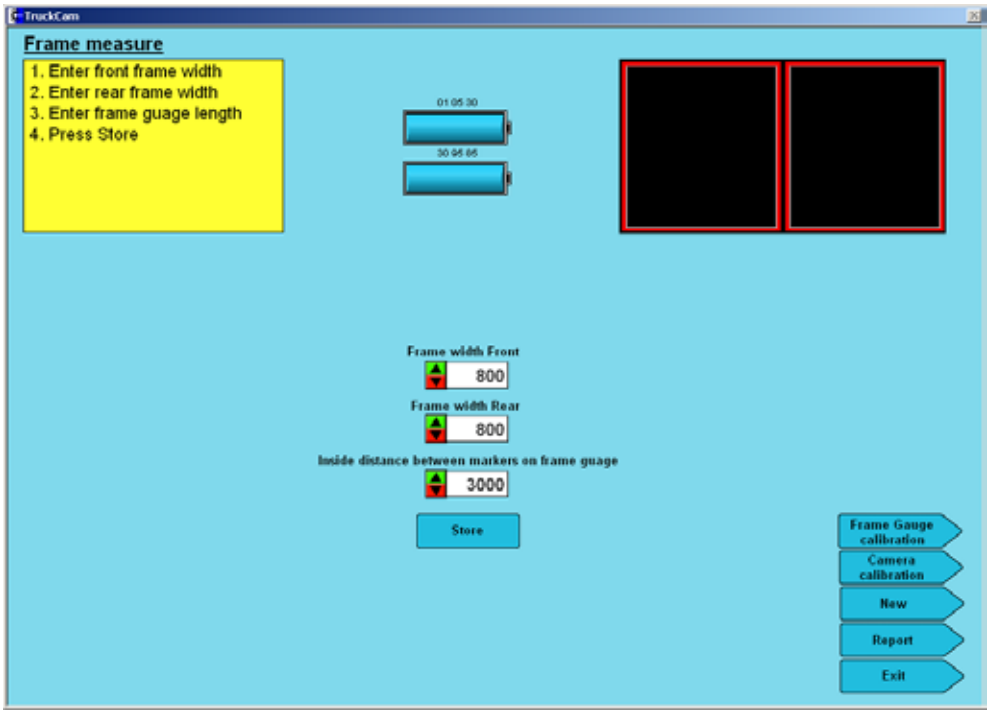
They are mounted by fitting the hooks at the end of the wheel adapter legs either on the inside of the rim or between rim and tire, depending on rim make, and rotating the knob on the side of the wheel adapter to secure it.

Software and hardware startup

Start your computer, and start the TruckCam software by double clicking the program icon.

Start up the cameras by pressing the **ON/OFF** button.

In the TruckCam startup screen, choose **[Continue]** to start a new measurement or **[Resume]** to resume the latest measurement.
Please note! A **[Resume]** is only possible within 24 hours of the latest measurement.



When choosing **[Continue]** the screen “Frame Measure” is shown. This is the basic screen from where both measurement and calibration functions are started.

4. CALIBRATION OF EQUIPMENT

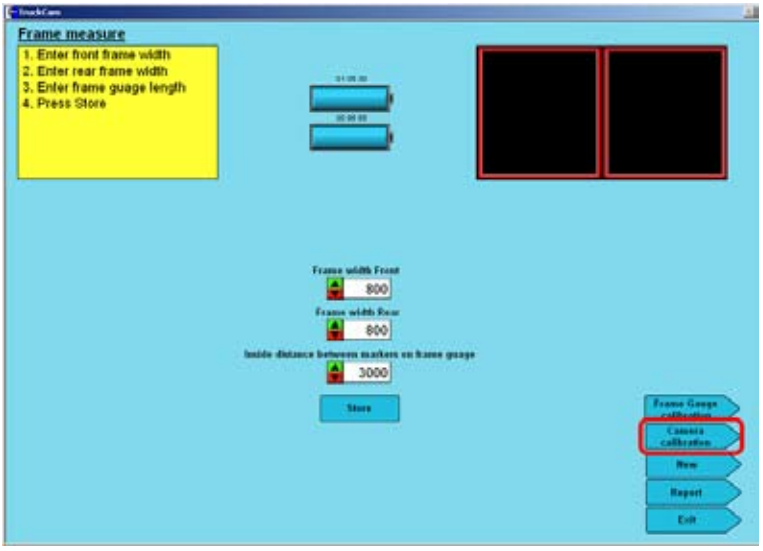
Camera Calibration

The TruckCam software has a built-in functionality for checking and calibrating the cameras. This calibration is carried out on the vehicle to be measured, using the standard measurement equipment.

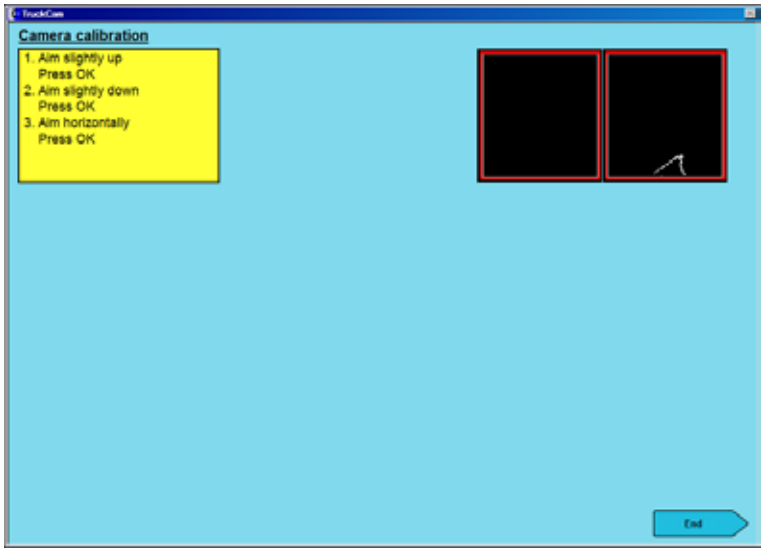
If necessary, start up the unit itself by pressing the **ON/OFF** button on the back of the camera.

Start the program and continue by clicking **[Continue]**.

In the “Frame measure” measurement window, click **[Camera Calibration]**

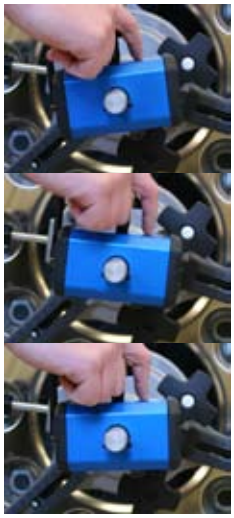


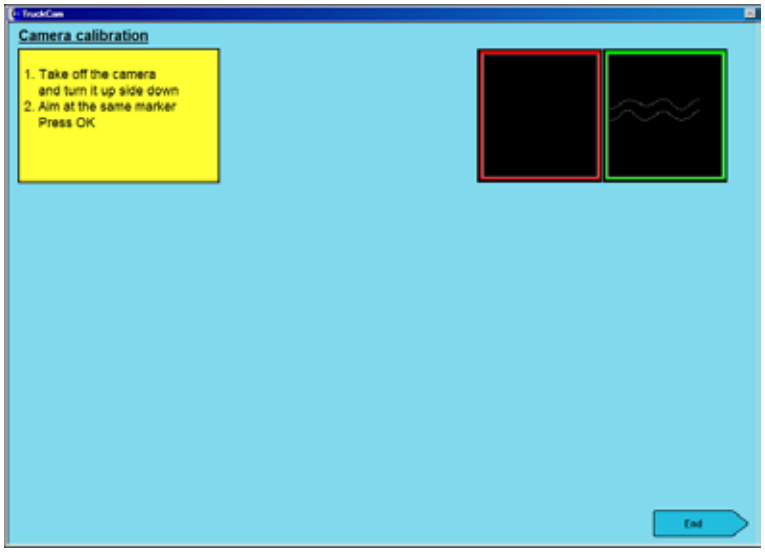
Aim the camera at the far marker.



Follow the steps presented by the help texts in the yellow square on the computer screen.

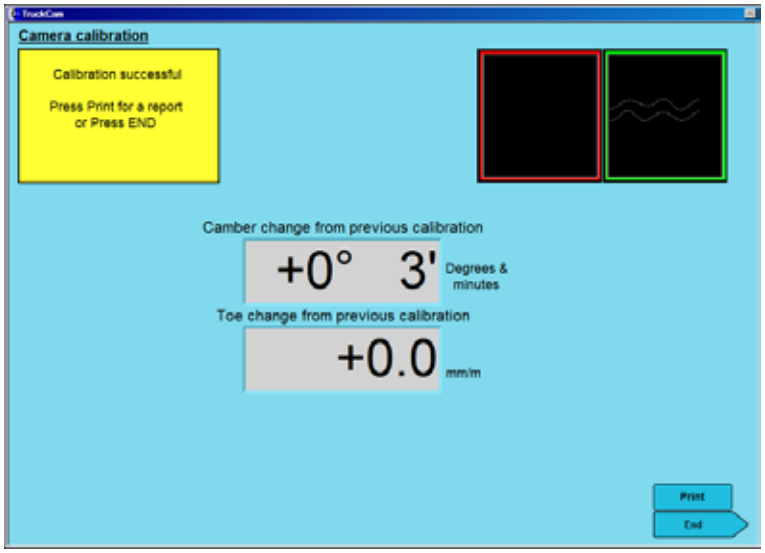
1. Aim the camera slightly upwards and press the **OK** button.
2. Aim the camera slightly downwards and press the **OK** button.
3. Aim the camera horizontally and press the **OK** button.





4. End turn the camera by taking it off of the wheel adapter spindle, turning it upside down and putting it back on the wheel adapter spindle again.

5. Aim the camera at the same marker and press the **OK** button.



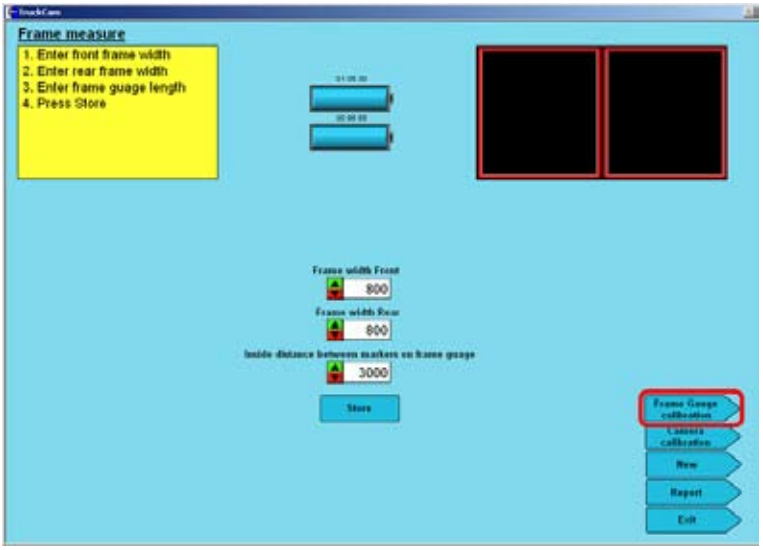
The screen will display the calibrated values.

Click **[Print]** to print a calibration report.

Click **[End]** to continue.

Frame gauge calibration

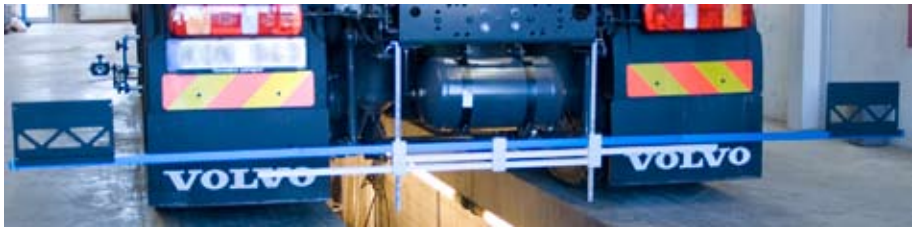
In order to perform a proper and correct measurement it is not only important to check if the cameras are calibrated but also very important to check whether the hardware (frame gauges) you are using is in perfect order. This checking of hardware can be done by use of the software and cameras under Frame Gauge Calibration.



In the “Frame measure” measurement window, please click on **[Frame gauge calibration]**.

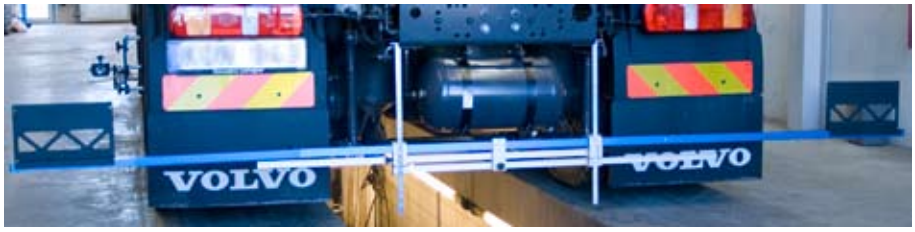
Mount two wheel adapters with cameras on one of the vehicle axles. Hang the self centring gauge you are about to calibrate as square as possible to the frame, either in the front of the vehicle or at the position on the frame where it is easiest to end turn the frame gauge by 180°. Place the front markers in the correct positions on the frame gauge.

Please follow the steps presented by the help texts in the yellow square on the computer screen:



Position 1

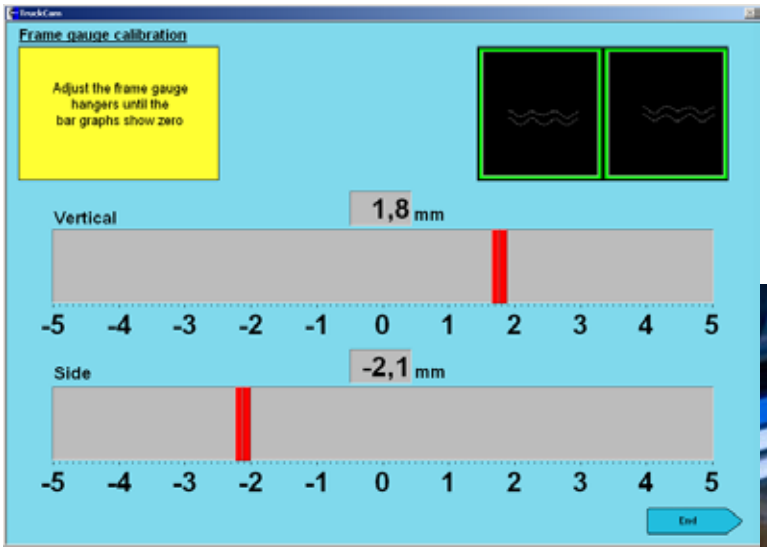
1. Aim one camera with the securing screw up at one of the markers and press **OK**.
2. Aim the camera on the other side of the vehicle, with the securing screw up at the other marker and press **OK**.



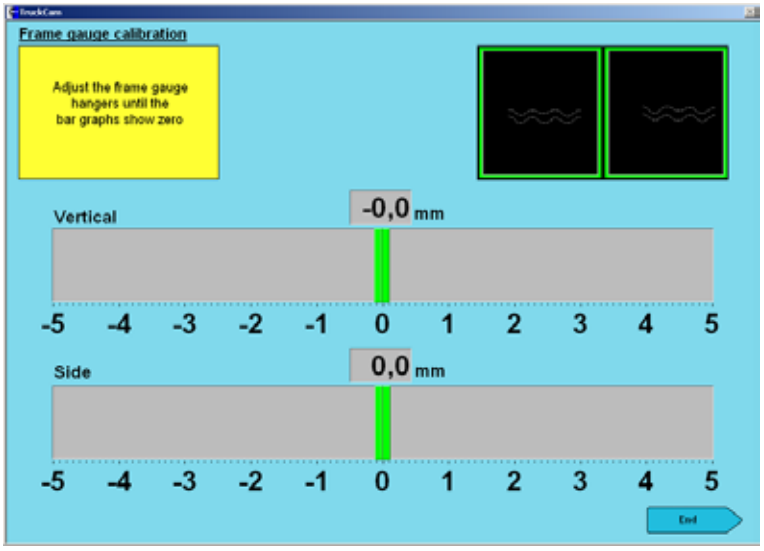
Position 2

3. End turn the frame gauge by rotating it 180° and hang it on the same spot in the frame as before.
4. Move the markers to the correct positions and make sure they are faced at the cameras.
5. Press **OK** on one of the cameras.

Please note! The cameras should not be touched during the frame gauge rotation as this will influence the calibration result.


Frame gauge calibration
Adjust the frame gauge hangers until the bar graphs show zero
Vertical
1,8 mm
-5 -4 -3 -2 -1 0 1 2 3 4 5
Side
-2,1 mm
-5 -4 -3 -2 -1 0 1 2 3 4 5
End

The bar graphs on the screen will now show the error of the frame gauge in vertical as well as side position.


Frame gauge calibration
Adjust the frame gauge hangers until the bar graphs show zero
Vertical
-0,0 mm
-5 -4 -3 -2 -1 0 1 2 3 4 5
Side
0,0 mm
-5 -4 -3 -2 -1 0 1 2 3 4 5
End

Adjust the frame gauge hangers until the bar graphs on the computer screen shows zero or turn into green.

The frame gauge is now calibrated and ready for use.

Click on **[End]** to return to the screen “Frame Measure”.

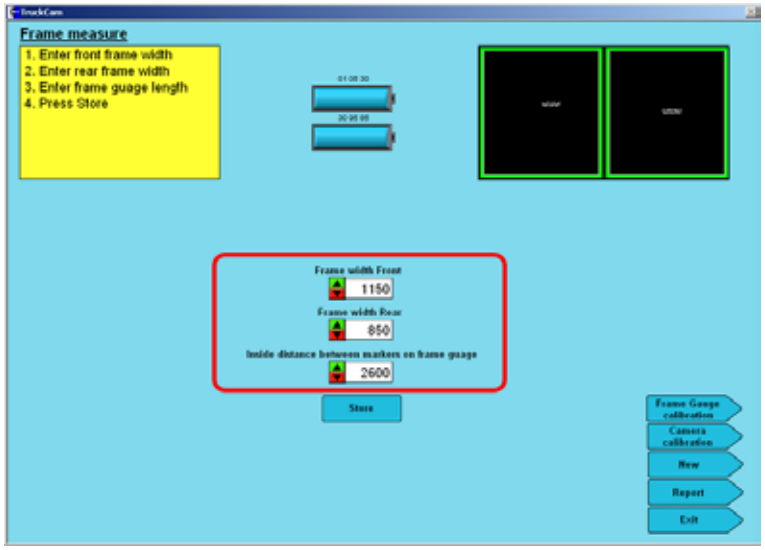
Please note! In order to get perfect measurement results, please calibrate all frame gauges before measuring a frame.

5. MEASUREMENT PROCEDURES

Start the TruckCam software by double clicking on the program icon.

Follow the necessary steps for preparation as described in Chapter 3 Measurement preparation and Chapter 4 Calibration of equipment.

To start measuring a frame, the software first needs some parameters from the frame and frame gauges.

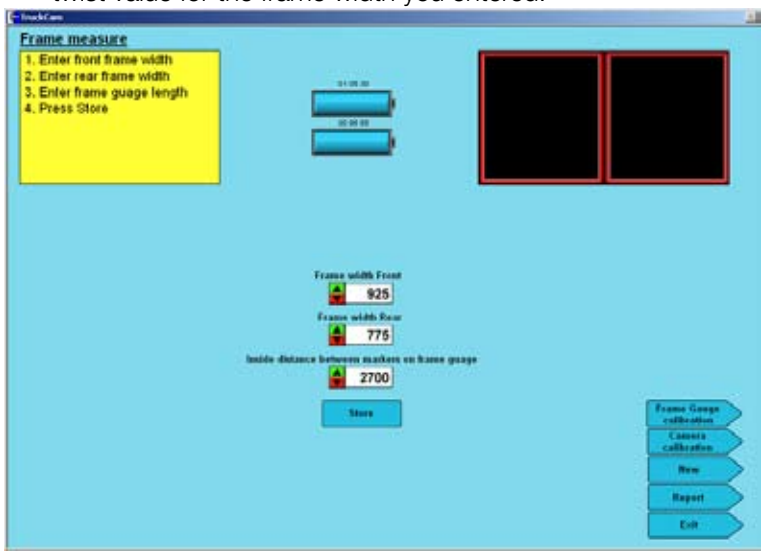


1. Measure the width of the frame with a tape measure in the front.

2. Enter the data into the software in the “Frame Measure” measurement screen, either by clicking with the mouse on the green or red arrows, or by entering the numbers from the computer keyboard.
   Please note! The values shown on the computer screen are in mm.

3. Measure the width of the frame in the rear. Enter the data into the screen as described above.

4. Measure the inside distance between the left and right marker. Enter the data into the screen as described above. The program needs this distance in order to calculate the twist value for the frame width you entered.



5. Click on **[Store]**.

Please follow the steps presented by the help texts in the yellow square on the computer screen:

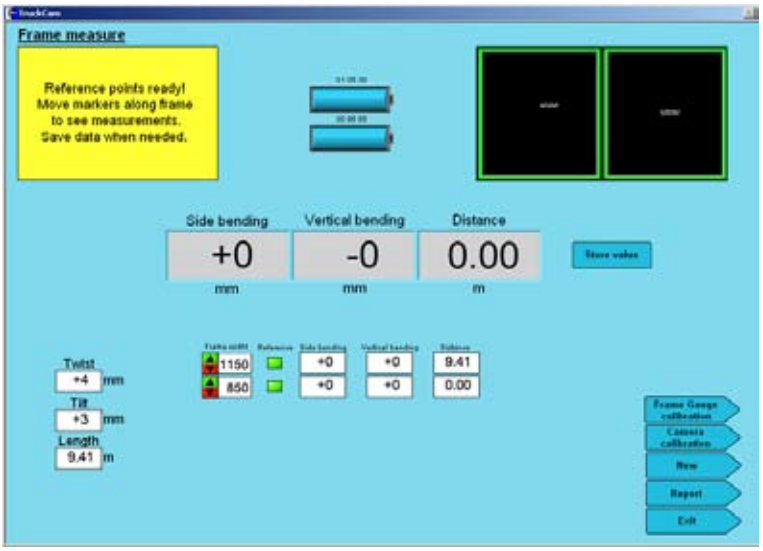
1. Aim one camera with the securing screw up at the closest marker and press **OK**.

2. Take the first camera from the spindle and place the second camera on the same wheel adapter. Aim this second camera with the securing screw up at the same marker and press **OK**.
   The two cameras have both taken a picture of the same target in order to let the computer combine both pictures to calculate the correct values.

3. Stay on the same side and remove the camera from the spindle, turn it 180° and remount it on the spindle. Aim the camera with the securing screw up at the far marker and press **OK**.

4. Go to the other side with the free camera. Mount that camera on the spindle and aim the camera with the securing screw up at the closest marker and press **OK**.

5. Remove the camera from the spindle, turn it 180° and remount it on the spindle. Aim the camera with the securing screw up at the far marker and press **OK**.



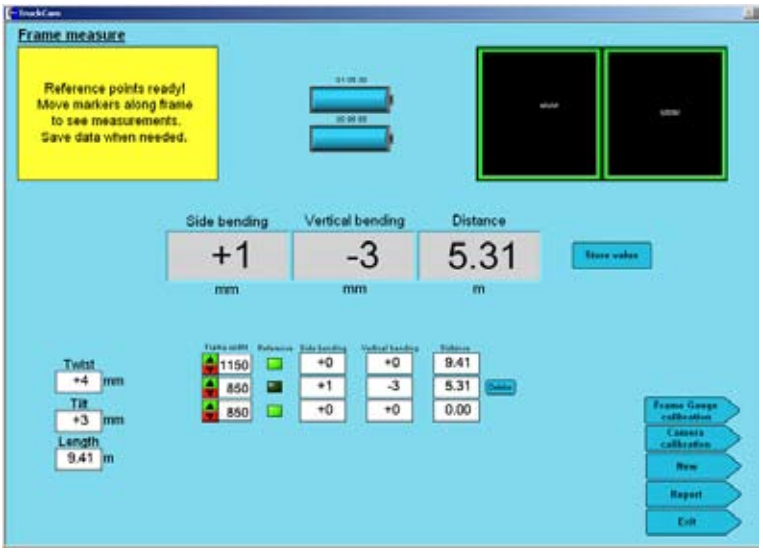
The program has taken four reference points of the frame, the data of which is now displayed on the computer screen. The screen displays the distance between the scales in the front and the back of the frame. On the left side you can see the twist of the frame, which in this example is 4mm, and the tilt (leaning) which in the example is 3mm.

If you are using more than two frame gauges, and you have placed for instance three more gauges in between the front and the rear gauges, you are now able to move the targets which are placed on the gauges on the far side to the next frame gauge in order to take a 3rd, a 4th and a 5th measuring point.

When you are using two frame gauges, you need to move the frame gauge on the far side including the markers to the next point of the frame you want to measure.

Please note! You are not allowed to touch or move the cameras as they are now in measurement position. Any movement will result in measurement errors and the measurement will need to be started over again.

For the third and following measurement points the live value will appear on the computer screen.

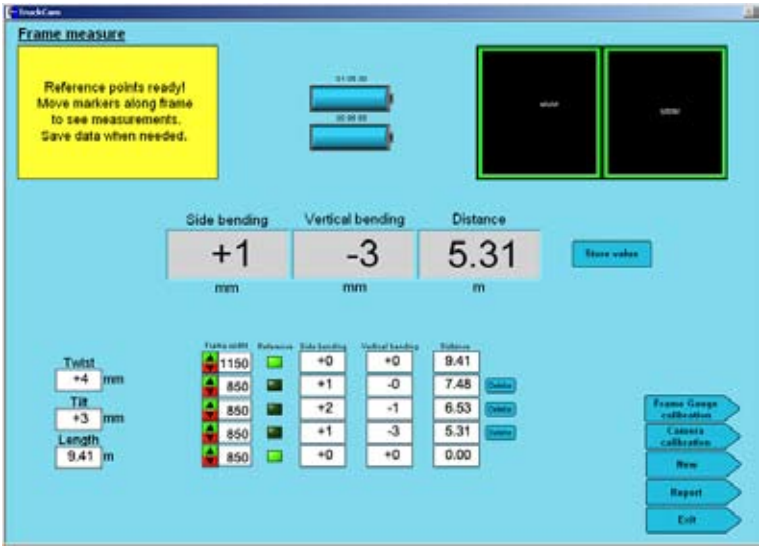


In this example you can see that in this particular point of the frame (5,31m) there is a side bend of 1mm and a vertical bend of 3mm.

Click on **[Store Value]** in order to save the measured values in this point.

To remove the value, click on **[Delete]**.

Move your targets or the complete frame gauge with targets to the next point you want to measure and save the values.

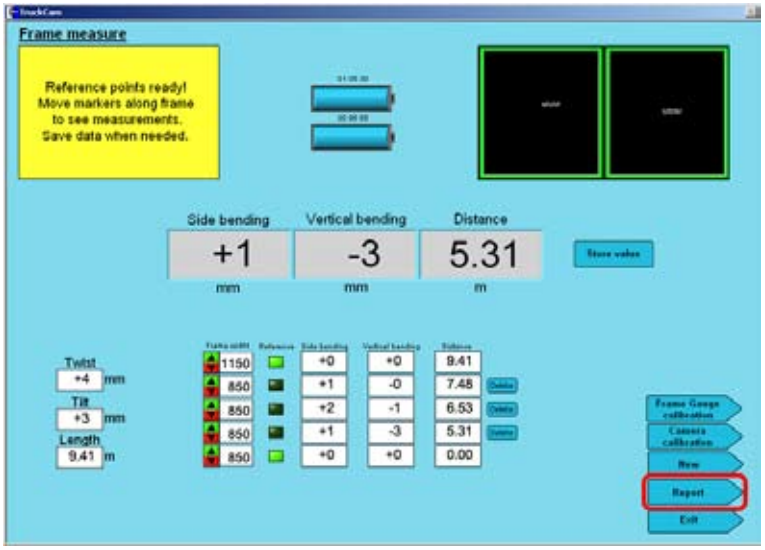


All values in the screen are now shown and calculated with reference points in the front and in the rear of the chassis.

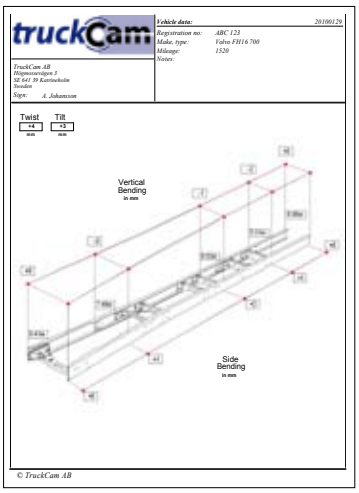
The software allows you to change the reference points by clicking on the squares under “Reference”. When changing the reference points, the software automatically calculates the values for side bending and vertical bend. In this case no new measurement is required.

6. MEASUREMENT DOCUMENTATION

Printed and saved report



To print and/or save a report of the measurement, click **[Report]**.



Choose **[Vehicle data]** to enter data about the measured vehicle, **[Save]** to save the current measurement, **[Print]** to print the report sheet and **[Done]** to return to the “Frame Measure” measurement window.

When clicking **[Save]** a dialog box will open to allow you to choose file name and where to save the measureemnt data. The data will be saved in the form of a jpg-image, a picture of the printed report.

7. SYSTEM MAINTENANCE

Well kept and well maintained system parts will greatly increase and secure the reliability and life time of the system.

Cameras

In order to maintain the measurement system, make sure the cameras are kept in order and store them in the charging cradle when not in use to avoid damage. The protective front glass of the cameras may be cleaned using a dry, soft cloth if necessary. If a camera is dropped on the floor, please do a calibration of the unit. If that calibration fails, please send the unit for repair accompanied by necessary fault descriptions.

Reflective targets

The reflective targets should be kept clean at all times. Clean them when necessary using a mixture of 50% alcohol and 50% water and dry them with a soft cloth. Please be aware that grease or oil on the reflective wave will affect the functionality of the system and might influence measurement results and/or the working speed of the cameras.

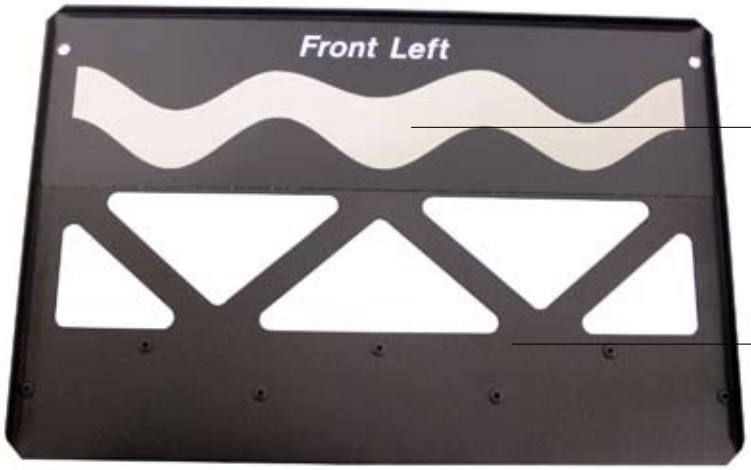
Other equipment

Please check on regular basis the functionality of all other hardware, like wheel adapters and frame gauges, in order to avoid faulty measurements.

APPENDIX A - SYSTEM SPARE PARTS

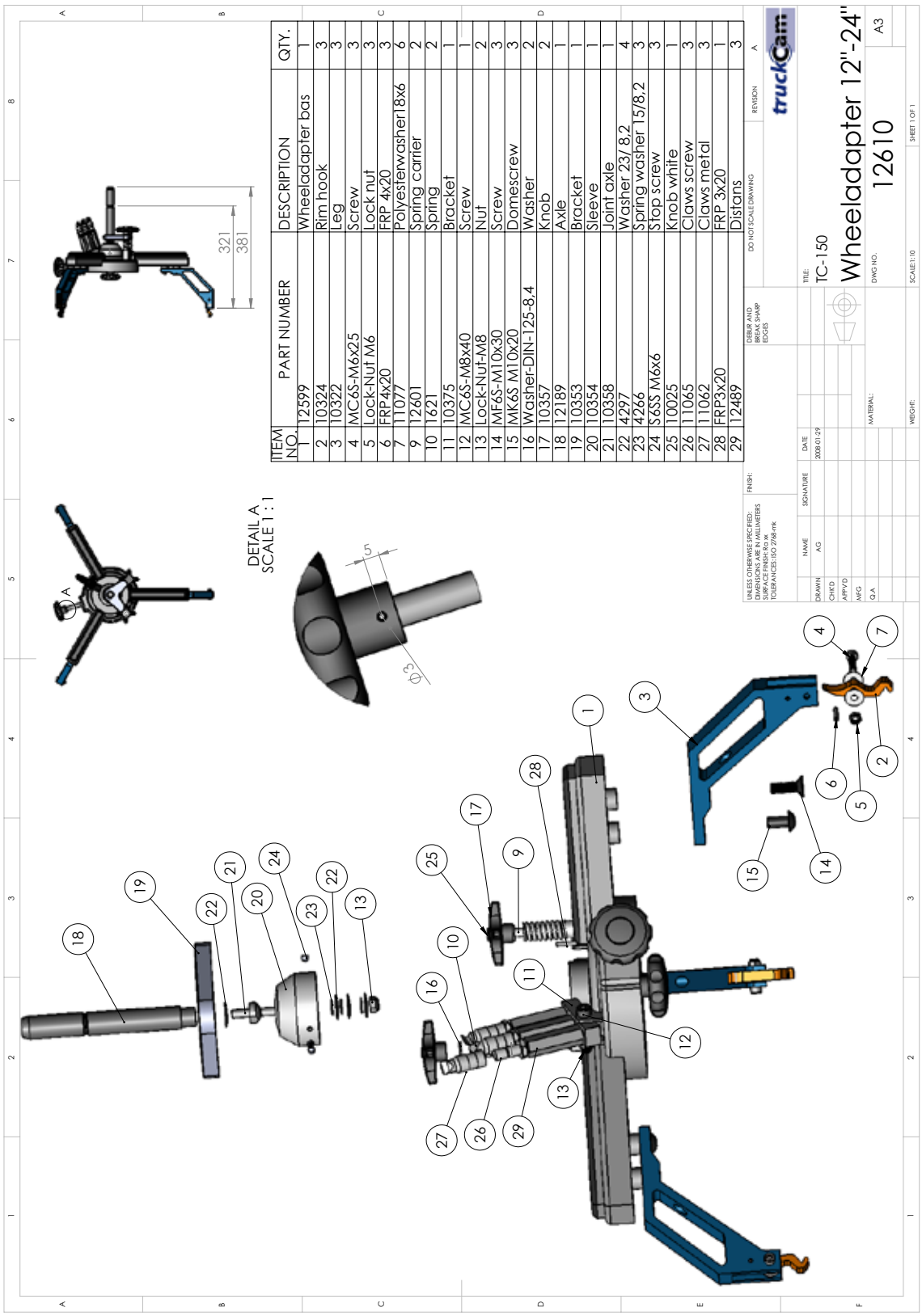
Camera Sensor, TC-256

Frame Markers, TC-207-10, -20, -30, -40



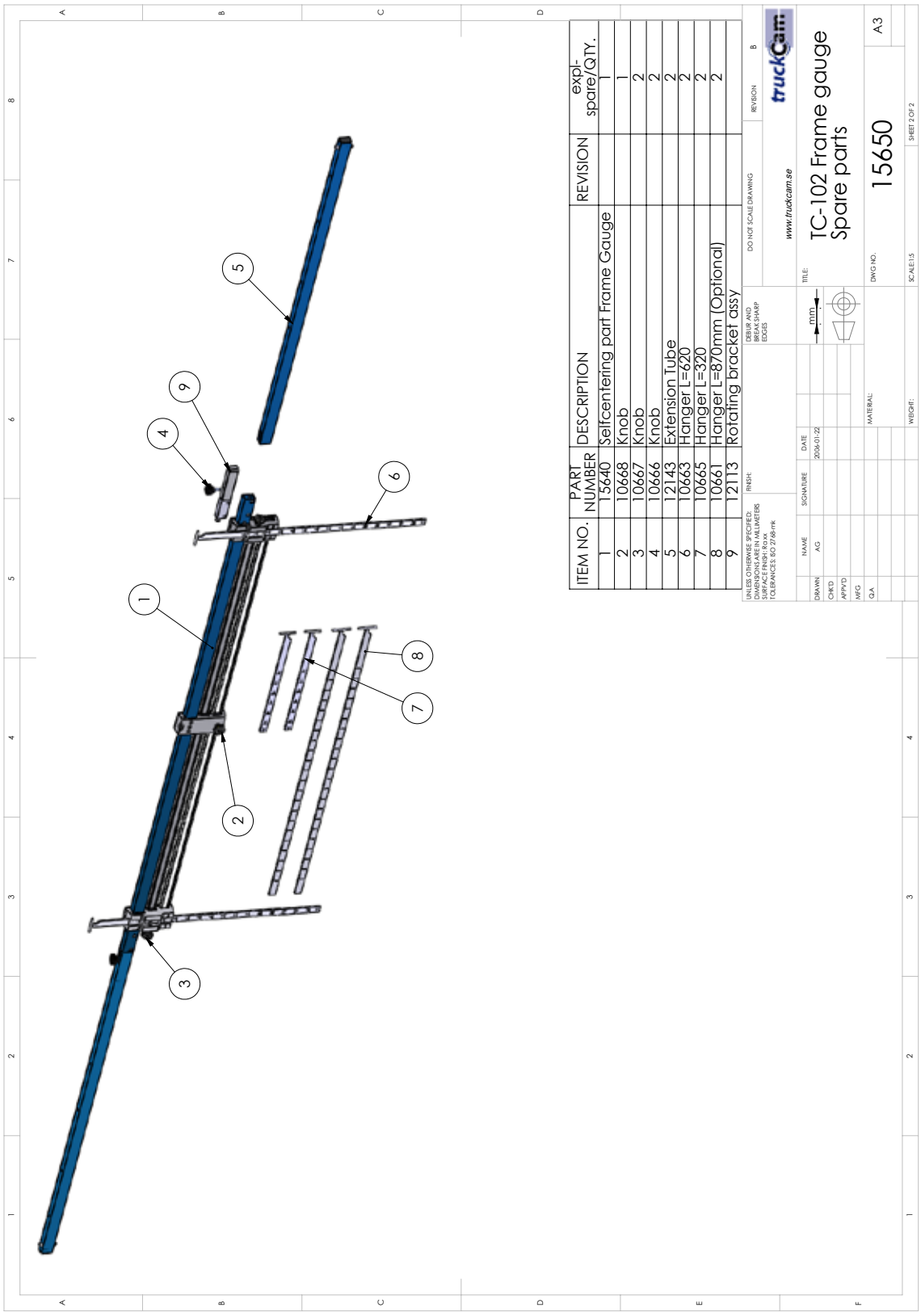
ITEM	PRODUCT / PART	PRODUCT / PART NO
TC-207-10		
1.	Frame marker reflex sticker FL	TC-207-01
2.	Frame marker FL RR sheet	TC-207 FL RR
TC-207-20		
1.	Frame marker reflex sticker FR	TC-207-02
2.	Frame marker FR RL sheet	TC-207 FR RL
TC-207-30		
1.	Frame marker reflex sticker RL	TC-207-03
2.	Frame marker FR RL sheet	TC-207 FR RL
TC-207-40		
1.	Frame marker reflex sticker RR	TC-207-04
2.	Frame marker FL RR sheet	TC-207 FL RR

Wheel Adapter 12” - 24”, TC-150



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	12599	Wheeladapter bas	1
2	10324	Rim hook	3
3	10322	Leg	3
4	MC6S-M6x25	Screw	3
5	Lock-Nut M6	Lock nut	3
6	FRP 4x20	FRP 4x20	3
7	11077	Polyesterwasher18x6	6
9	12601	Spring carrier	2
10	1621	Spring	2
11	10375	Bracket	1
12	MC6S-M8x40	Screw	1
13	Lock-Nut-M8	Nut	2
14	MF6S-M10x30	Screw	3
15	MK6S M10x20	Domescrew	3
16	Washer-DIN-125-8,4	Washer	2
17	10357	Knob	2
18	12189	Axle	1
19	10353	Bracket	1
20	10354	Sleeve	1
21	10358	Joint axle	1
22	4297	Washer 23/ 8,2	4
23	4266	Spring washer 15/8.2	3
24	S&S M6x6	Stop screw	3
25	10025	Knob white	1
26	11065	Claws screw	3
27	11062	Claws metal	3
28	FRP3x20	FRP 3x20	1
29	12489	Distans	3

Frame Gauge, TC-102



ITEM NO.	PART NUMBER	DESCRIPTION	REVISION	expl-spare/QTY.
1	15640	Selfcentering part Frame Gauge		1
2	10668	Knob		1
3	10667	Knob		2
4	10666	Knob		2
5	12143	Extension Tube		2
6	10663	Hanger L=620		2
7	10665	Hanger L=320		2
8	10661	Hanger L=870mm (Optional)		2
9	12113	Rotating bracket assy		2

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN MILLIMETERS
SURFACE FINISH: Ra xx
TOLERANCES: ISO 2768-mK

FINISH:

DEBUR AND BREAK SHARP EDGES

	NAME	SIGNATURE	DATE
DRAWN	AG		2018-01-22
CHK'D			
APPV'D			
MFG			
Q.A.			

MATERIAL:

WEIGHT:

DO NOT SCALE DRAWING

REVISION B

truckCam

www.truckcam.se

TITLE:
TC-102 Frame gauge
Spare parts

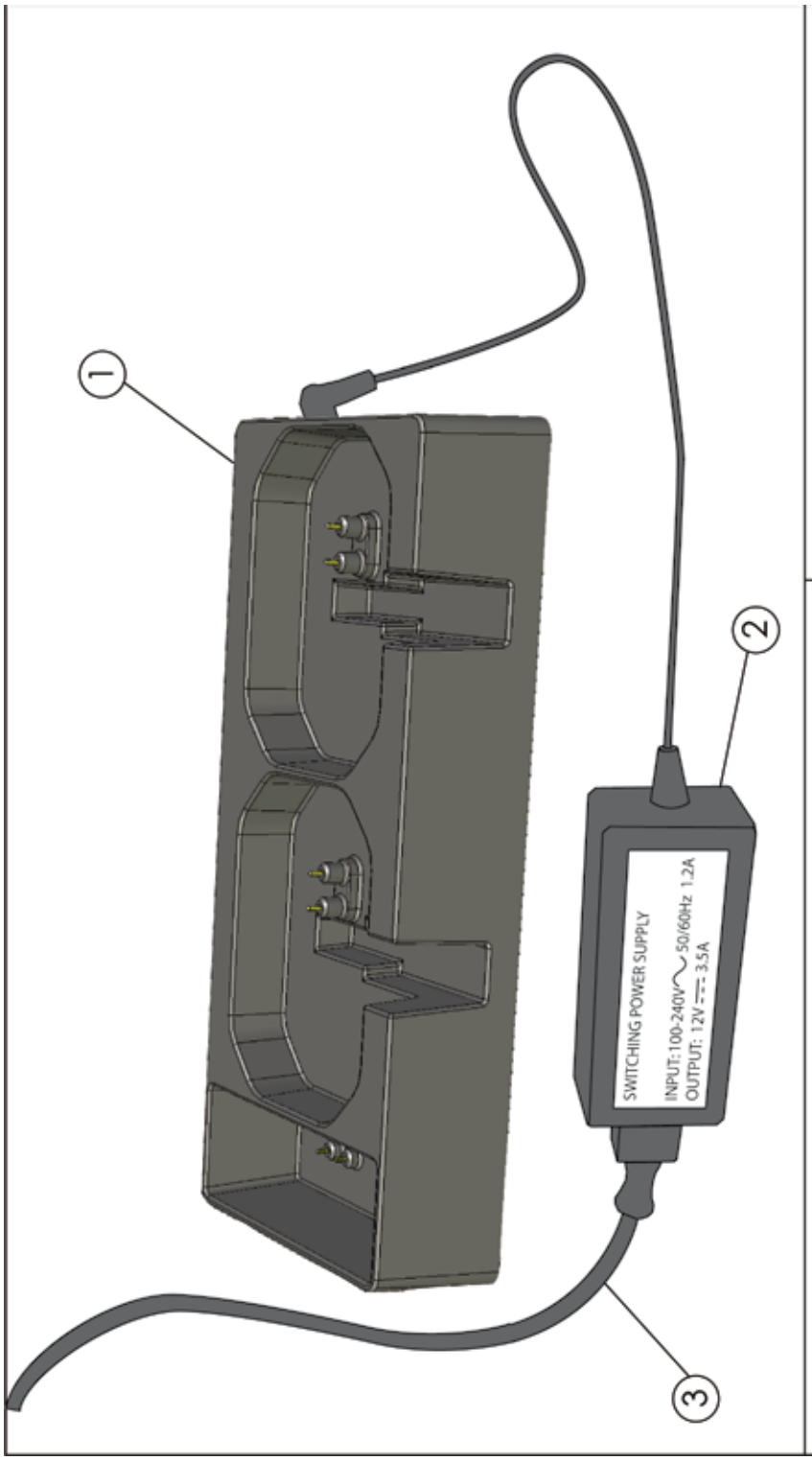
DWG NO. 15650

A3

SCALE: 1:5

SHEET 2 OF 2

Charging Cradle, TC-395



TC-395 Charging cradle

Item	Part number	Description
1	11518	Charging cradle triple
2	11094	Charger 12V
3	10959	Cable 220V black

APPENDIX B - CE DECLARATION

EC Declaration of Conformity

Model	TC-256 Camera Sensor
Brand name	TruckCam
Manufacturer	TruckCam AB Högmossevägen 3 SE-641 39 Katrineholm Sweden Tel. +46 150 66 25 40 Fax. +46 150 66 25 41

TruckCam AB declares under our sole responsibility that the product identified as **TC-256 Camera Sensor** to which this declaration relates is in conformity with the **European Directive 89/336/EEC.**

The following harmonized standards has been applied:

EN 61000-6-2:2005	EMC Immunity
EN 61000-6-4:2007	EMC Emission

The product is CE-marked.

In accordance with the EC Declaration of Conformity, the product must not be modified without the manufacturer's permission. If this occurs, this documented EC Declaration of Conformity ceases to apply and the product's owner is considered to be the manufacturer and must verify and draw up an addendum to the EC Declaration of Conformity and file technical data for the inspection authority.

Katrineholm, Sweden, on the 19th of March 2008

Thorleif Josefsson
Managing Director, TruckCam AB

TruckCam AB
info@truckcam.se
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fax. +46 (0) 150 66 25 41

COPY

APPENDIX C - CONTACT INFORMATION

For support, please contact the local TruckCam representative in your area or country.

System Manufacturer

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Högmossevägen 3
SE 641 39 Katrineholm
Sweden

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Fax: +46 (0)150 66 25 41
E-mail: info@truckcam.com
Internet: www.truckcam.com